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09/964,737	09/28/2001	Tomohiro Okada	29287/124	3470

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KENYON & KENYON  
Suite 700  
1500 K Street, N.W.  
Washington, DC 20005

EXAMINER

KIM, PAUL D

ART UNIT PAPER NUMBER

3729

DATE MAILED: 10/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/964,737

Applicant(s)

OKADA ET AL.

Examiner

Paul D Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This office action is a response to the amendment filed on 9/9/2003.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the using a negative resist or an electron beam resist to form a frame for plating a rear portion of the upper magnetic core above the end portion of the upper magnetic core recited in claim 1, lines 5-7, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Claim Objections***

3. Claims 4-7 are objected to because of the following informalities:

The phrase "a face opposed to a medium" in lines 3-4 of claim 4 should be changed to --the face opposed to the medium--.

The phrase "a face" in line 6 of claim 4 should be changed to --the face--.

The phrase "a face" in line 10 of claim 6 should be changed to --the face--.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shouji et al. (US PAT. 6,033,580) in view of Toyoda et al. (JP 06020227 A).

Shouji et al. teach a method of making a thin film magnetic head comprising steps of: providing an upper magnetic core (17a) as shown in Figs. 7A and 7B; covering an end portion of the upper magnetic core with a non-magnetic protective film (23) as shown in Figs. 8A and 8B; removing the non-magnetic protective film from an upper part until the upper magnetic core is exposed as shown in Figs. 9A and 9B; and wherein a front end of a connection area in which the end portion is connected a rear portion (19) of the upper magnetic core as shown in Fig. 11B is located between a face opposed to a medium and a position defining a gap depth as shown in Fig. 17 (col. 3, line 62 to col. 5, line 44).

As per claim 2 Shouji et al. teach that the non-magnetic protective film is removed by polishing process (col. 5, lines 23-26).

As per claim 4 Shouji et al. teach that the end portion of the upper magnetic core has a first face emerging at a face opposed to a medium as shown in Figs. 8B and 9A and the rear portion of the upper magnetic core has a second face not emerging at the

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face opposed to the medium, which is connected to the end portion of the upper magnetic core at a position of the second face as shown in Figs. 11A and 11B.

However, Shouji et al. do not teach a process of forming the rear portion of the upper magnetic core using a negative resist to form a frame for plating the rear portion of the upper magnetic core above the end portion of the upper magnetic core. Toyoda et al. teach a process of making a thin film magnetic head including processes of forming a frame (60) by using the negative resist on the end portion of the upper magnetic core (32a); plating the rear portion of the upper magnetic core (32b); and removing the resist frame as shown in Fig. 1 (see also abstract). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating the rear portion of the upper magnetic core of Shouji et al. by plating the rear portion of the upper magnetic core using the resist frame as taught by Toyoda et al. for the purpose of optimizing to form the rear portion of the upper magnetic core at a desired location and shape during the production.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shouji et al. in view of Toyoda et al., and further in view of Hira et al. (US PAT. 5,567,333).

Shouji et al., modified by Toyoda et al., teach all of the limitations as set forth above except a process of removing of the non-magnetic protective film by gas etching. Hira et al. teach a process of producing a thin film magnetic head including a gas etching process to remove a material such as a photoresist. The gas of CF<sub>4</sub> or Ar is used for the gas etching (col. 7, lines 3-43). Therefore, it would also have been obvious

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at the time the invention was made to a person having ordinary skill in the art to modify a process of removing of the non-magnetic protective film of Shouji et al., modified by Toyoda et al., by a gas etching process as taught by Hira et al. for the purpose of obtaining accuracy improvement of a uniform top surface of the magnetic head.

7. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shouji et al. in view of Toyoda et al., and further in view of Ohashi et al. (US PAT. 5,828,533).

Shouji et al., modified by Toyoda et al., teach all of the limitations as set forth above except a distance between the first and second faces. Ohashi et al. teach a process of producing a thin film magnetic head including a distance between a first face of the end portion of the upper magnetic core (102) and a second face (230) of the rear portion of the upper magnetic core (203) has not emerging at the face opposed to the medium is 5-15  $\mu\text{m}$  to provide a high-density recording for the thin film magnetic head (col. 5, lines 32-47). Therefore, it would also have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating the thin film magnetic head of Shouji et al., modified by Toyoda et al., by a distance between the first and second faces as taught by Ohashi et al. for the purpose of obtaining a high-density recording for the thin film magnetic head.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to provide the distance between the first and second faces as recited in the claimed invention because Applicant has not disclosed that the distance between the first and second faces as recited in the claimed

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invention provides an advantage, is used for a particular purpose, or solves a stated problem. Therefore, it would have been an obvious matter of design choice to modify the distance between the first and second faces of Ohashi et al. to obtain the invention as specified in claims 5 and 7.

### ***Response to Arguments***

8. Applicant's arguments with respect to claims 1-7 have been considered but are moot in view of the new ground(s) of rejection. Rejections are based on the newly cited reference.

Applicant argues that the prior art of record fails to disclose the claimed invention such as using a negative resist to form a frame for plating the rear portion of the upper magnetic core. Examiner traverses the argument that Toyoda et al. teach processes of forming a frame by using the negative resist on the end portion of the upper magnetic core and plating the rear portion of the upper magnetic core as shown in Fig. 1. It would be obvious to form the rear portion of the upper magnetic core at a desired location and shape by using the negative resist frame during the production.

### ***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D Kim whose telephone number is 703-308-8356. The examiner can normally be reached on Tuesday-Friday between 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5648.

pdk



PETER VO  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700